

Motorcycle Helmet Use in Texas

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Synopsis

Helmets worn by motorcyclists decrease head injuries and the likelihood of being killed in a crash

In the early 1970s, all but three States had laws requiring all motorcyclists to wear motorcycle helmets. By 1980, 29 States had either abolished or substantially weakened their laws by making them applicable only to young motorcycle operators and their passengers (typically those under age 18). In 1982, Louisiana reinstated a helmet use law that applied to motorcyclists of all ages, and in the late 1980s, three additional States—Nebraska, Oregon, and Texas—had passed or amended laws so that they apply to all motorcyclists. All four of these States had required helmet use by riders of all ages in the early 1970s.

Motorcycle helmets decrease head injuries and reduce the likelihood of being killed in a crash by about 30 percent (1,2). Observational studies have shown that when helmet use is voluntary for all or most motorcyclists, use rates range anywhere from about 30 percent to 60 percent but are generally 40-50 percent; when all motorcyclists are required by law to wear helmets, use rates are typically close to 100 percent (3,4). When many helmet use laws were repealed in the late 1970s, observational studies in four States indicated that helmet use dropped from nearly 100 percent to 40-50 percent (5). When Louisiana reinstated its law to apply to

by about 30 percent. From 1968 to 1977, Texas had a comprehensive motorcycle helmet use law, which was estimated to have saved 650 lives. But the law was amended in 1977 to apply only to motorcycle operators and passengers under age 18. In September 1989, a new law was passed that required helmets for all motorcycle operators and passengers.

Observations of helmet use were conducted before and after the law took effect in 18 Texas cities using a survey design providing a cross-section of urban and suburban traffic across the State. The surveys indicated that helmet use increased from less than 50 percent just before the law to 90 percent immediately after, and it increased further to more than 95 percent 2 months later. These results confirm the unique effectiveness of comprehensive helmet use laws in applying the proven public health benefits of helmets to the reduction of motorcycle injuries and deaths.

all motorcyclists, rather than only to those under age 18, helmet use rates increased from 50 percent to 96 percent in the first year (6). Various studies have shown that when helmet use laws are repealed, head injuries and deaths increase significantly; when the laws are reinstated, head injuries and deaths decrease (1,5-7).

Texas first enacted a law requiring helmet use by all motorcyclists in 1968. The law was amended in 1977 to apply only to those under age 18. The requirement for all motorcycle drivers and passengers of all ages to wear helmets was reinstated as of September 1, 1989. All scooter and moped riders (instead of only those less than 18) are also covered (8).

In this paper, we present the results of a series of observational surveys of helmet use in 18 Texas cities before and after the September 1989 law.

Method

Helmet use by drivers and passengers of motorcycles, mopeds, and scooters in Texas was measured on eight occasions, six times before the law took effect (June 1987, January 1988, June 1988, January 1989, June 1989, and August 1989) and

twice afterward (September 1989 and November 1989). These measures were taken at 12 streetside observation posts in each of 18 Texas cities using a survey design intended to provide a cross-section of urban and suburban traffic across the State. Helmet use was observed for both drivers and passengers and for traffic traveling in either direction.

During the first five measurement periods, helmet use was observed as part of the Texas Transportation Institute's evaluation of compliance with the seat belt use law in Texas. Observations of helmet use and belt use were made on weekdays (Mondays–Thursdays). They began at the same time of day for each period, and they continued until 250 belt use observations had been obtained. Only motorcycle helmet use was observed during the final three periods, but the observations were made at the same times of day as in the previous periods, and the length of time at each site was the average time that had been spent at the site during the first five periods.

Helmet use observations were performed by trained observers during all periods, and the methods were identical across periods except that the type of vehicle (motorcycle, moped, or scooter) was not coded during the first five measurement periods. However, for the August, September, and November 1989 periods, observers made these distinctions, as well.

Results

Table 1 and the figure show the percentage of drivers and passengers of motorcycles, mopeds, and scooters wearing helmets during each observation period for all cities combined. In the 2 years before the September 1989 law, helmet use varied between 37 and 62 percent; the use rate was 41 percent the month before the law. In the first month of the law, helmet use rose to 90 percent and rose further to 96 percent 2 months later.

Motorcycle riders comprised 92 percent of all riders of two-wheel motorized vehicles observed in the last three surveys. Table 2 shows that overall use rates were about the same for motorcyclists as for riders of all two-wheel vehicles; 97 percent were helmeted in the third month of the law. In November, all motorcyclists observed in 13 of the 18 cities surveyed were wearing helmets.

In the last three surveys, 92 percent of the motorcyclists were drivers, and 8 percent were passengers. Helmet use rates were higher for drivers: 44 percent the month before the law and 91 and 98 percent after the law. For passengers, use

Table 1. Helmet use in Texas, by drivers and passengers on motorcycles, mopeds, and scooters

Date	Wearing helmet	
	Number	Percent
Pre-law:		
June 1987	542	40
January 1988	190	62
June 1988	560	38
January 1989	337	54
June 1989	621	37
August 1989	774	41
Post-law:		
September 1989	761	90
November 1989	595	96

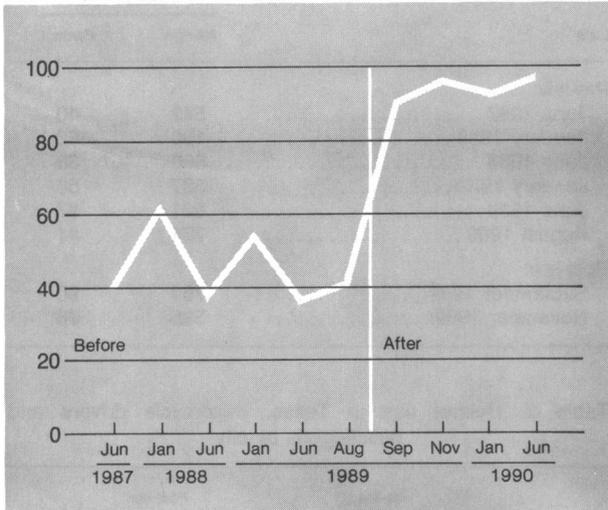
Table 2. Helmet use in Texas, motorcycle drivers and passengers, by city

City	Pre-law		Post-law			
	August 1989		September 1989		November 1989	
	Number	Percent	Number	Percent	Number	Percent
Abilene	55	62	28	86	33	94
Amarillo	34	32	20	75	22	91
Austin	38	79	57	91	43	100
Beaumont	19	58	19	100	18	100
Brownsville ...	32	38	34	65	42	88
Bryan-College Station	54	31	90	98	46	100
Corpus Christi	47	43	44	91	46	100
Dallas	24	58	36	97	47	100
El Paso	92	40	71	100	37	100
Fort Worth....	42	24	22	100	34	100
Houston	29	38	20	100	9	100
Laredo	26	27	37	38	21	71
Lubbock	21	38	22	82	15	100
Midland	34	56	33	100	13	100
San Antonio ..	26	54	41	100	27	100
Tyler	52	37	56	100	24	96
Waco	38	29	27	74	34	100
Wichita Falls..	54	35	45	96	40	100
Total ...	717	42	702	90	551	97

rates were 32 percent before the law and 76 and 86 percent after.

Discussion

After California, Texas has the largest number of motorcyclist deaths among all States. In 1988, 292 motorcycle drivers and passengers were killed in Texas—8 percent of the U.S. total (9). It has been estimated that during the 1968–77 period, when Texas had a law in effect applying to all motorcyclists, 650 lives were saved. And during the first 10 years of the weakened law, more than 1,400 lives could have been saved had the comprehensive law continued (10). The reinstated law



should produce similar savings in lives in the years ahead as well as decrease the numbers of motorcyclists with severe but survivable head injuries.

The current study confirms the dramatic effect of helmet use laws that apply to all motorcyclists; no other approach has succeeded in raising helmet use to anything close to these levels. When the amended law went into force in Texas in September 1989 requiring all motorcyclists—rather than only those under age 18—to wear helmets, helmet use jumped immediately from less than 50 percent to 90 percent in September and increased even further to more than 95 percent in November. Results from additional Texas Transportation Institute surveys showed helmet use of 92 percent in January 1990 and 98 percent in June of 1990 among motorcycle drivers and passengers in the same cities. The Texas results are very similar to the increase in helmet use that occurred in Louisiana when that State's coverage was extended to all motorcyclists. Most of the increases occurred immediately in Texas despite the announcement by some State officials that they would not enforce the law during its first 90 days, that is, until December.

The dramatic compliance with helmet use laws stands in stark contrast to the effect of seat belt use laws. For example, although Texas has one of the most successful seat belt use laws of all States, surveys conducted in the same 18 cities indicated that belt use was still just 68 percent in June 1990 (11). Helmet law violations are more visible than belt use law violations, which makes them more easily enforced and likely explains some of the difference in compliance. In any case, helmet use

laws have been uniquely effective in bringing the proven public health benefits of protective helmets to bear on the problem of motorcyclist injuries and fatalities. It is likely that the 28 other States that presently require helmet use for only young motorcyclists (24 States) or no motorcyclists (4 States) would duplicate the experience of Texas if they required helmet use by all motorcyclists.

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